

# Contents

## Volume 130 (1984)

### Research Papers

- An international collaborative study of 'genetic drift' in *Salmonella typhimurium* strains used in the Ames test (MTR 08521)  
by Diana Anderson, M.H.L. Green, Ina E. Mattern and M.J. Godley (Carshalton, Falmer, Rijswijk and Alderley Park) ..... 1- 10
- Sources of variability in Ames *Salmonella typhimurium* tester strains:  
Analysis of the International Collaborative Study on 'Genetic Drift' (MTR 08522)  
by Barry H. Margolin, Kenneth J. Risko, Michael D. Shelby and Errol Zeiger (Research Triangle Park) ..... 11- 25
- Statistical evaluation of inter- and intra-laboratory variations of the Ames test, as related to the genetic stability of *Salmonella* tester strains (MTR 08523)  
by G. Agnese, D. Risso and S. De Flora (Genoa) ..... 27- 44
- Development of an in situ microbial mutagenicity test system for airborne workplace mutagens: laboratory evaluation (MTR 08524)  
by Wen-Zong Whong, John Stewart and Tong-man Ong (Morgantown) ..... 45- 51
- Differences in responses of 4 adult rat-liver epithelial cell lines to a spectrum of chemical mutagens (MTR 08518)  
by Charles Tong, Shyla Telang and Gary M. Williams (Valhalla) ..... 53- 61
- Micronuclei in lymphocytes with preserved cytoplasm  
A method for assessment of cytogenetic damage in man (MTR 08520)  
by Benkt Högstädt (Halmstadt and Lund) ..... 63- 72

### Meeting Report

- Population monitoring: Methods and Applications (MTR 08515)  
by Frederick J. de Serres (Research Triangle Park) ..... 73- 77

### Research Papers

- Validation of the *Salmonella* (SV50)/arabinose-resistant forward mutation assay system with 26 compounds (MTR 08528)  
by Jing Xu, Wen-Zong Whong and Tong-man Ong (Columbia and Morgantown) ..... 79- 86
- Evaluation of *Escherichia coli* K-12 343/113 and derived strains for microbial mutagenicity assays (MTR 08529)  
by J.M. Leonardo, S.S. Dornfeld and M.J. Peak (Argonne) ..... 87- 95
- RK bacterial test for independently measuring chemical toxicity and mutagenicity: Short-term forward selection assay (MTR 08532)  
by Sidney Hayes, Alasdair Gordon, Ivan Sadowski and Connie Hayes (Saskatoon) ..... 97-106
- Validating RK test: Correlation with *Salmonella* mutatest and SOS chromotest assay results for reference compounds and influence of pH and dose response on measured toxic, mutagenic effects (Appendix to MTR 08532)  
by Sidney Hayes and Alasdair Gordon (Saskatoon) ..... 107-111
- Micronuclei in human bone-marrow cells: Evaluation of the micronucleus test using human leukemia patients treated with antileukemic agents (MTR 08527)  
by Tatsuo Abe, Takuji Isemura and Yasumoto Kikuchi (Kyoto and Osaka) ..... 113-120
- Influence of dietary selenium on the mutagenic activity of perfusate and bile from rat liver, perfused with 1,1-dimethylhydrazine (MTR 08531)  
by Brita Beije, Agneta Önfelt and Ulf Olsson (Stockholm) ..... 121-126
- Induction of mutations by chemical agents at the hypoxanthine-guanine phosphoribosyl transferase locus in human epithelial teratoma cells (MTR 03834)  
by Eliezer Huberman, Catherine K. McKeown, Carol A. Jones, Dennis R. Hoffman and Shin-ichi Murao (Argonne and Oak Ridge) ..... 127-137

- Announcements ..... 139-140

### Research Papers

- Evaluation of the *Escherichia coli* K12 inductest for detection of potential chemical carcinogens (MTR 08536)  
by Stephen W. Mamber, Vernon Bryson and Stanley E. Katz (New Brunswick) ..... 141-151

The presence of the mutagenic polycyclic aromatic hydrocarbons benzo[a]pyrene and benzo[a]anthracene in creosote Pi (MTR 08534) by R.P. Bos, J.L.G. Theuvs, Ch.-M. Leijdekkers and P.Th. Henderson (Nijmegen) . . . . .	153-158
Density-gradient enrichment of newly-formed mouse erythrocytes Application to the micronucleus test (MTR 08539) by Wai Nang Choy and James T. MacGregor (Berkeley) . . . . .	159-164
<i>European Environmental Mutagen Society</i>	
Abstracts of posters presented at the 13th Annual Meeting of the European Environmental Mutagen Society (EEMS), September 5th-9th, 1983, Montpellier (France) (MTR 08537) . . . . .	165-263
<i>Announcements</i> . . . . .	265
<i>Research Papers</i>	
Depletion of the reduced glutathione level in the liver and production of the mutagens in the intestine in the mice inducing hepatoma by feeding on a high level dose of sorbic acid (MTR 08533) by Toshie Tsuchiya and Tsutomu Yamaha (Tokyo) . . . . .	267-272
The in vitro micronucleus assay for detection of cytogenetic effects induced by mutagen-carcinogens: comparison with the in vitro sister-chromatid exchange assay (MTR 08540) by C. Lasne, Z.W. Gu, W. Venegas and I. Chouroulinkov (Villejuif, Shanghai and Concepción) . . . . .	273-282
Alkaline elution of rat testicular DNA: Detection of DNA strand breaks after in vivo treatment with chemical mutagens (MTR 08542) by Julie A. Skare and Karen R. Schrotel (Cincinnati) . . . . .	283-294
Alkaline elution of rat testicular DNA: Detection of DNA cross-links after in vivo treatment with chemical mutagens (MTR 08543) by Julie A. Skare and Karen R. Schrotel (Cincinnati) . . . . .	295-303
<i>Local Activity Reports for 1983</i> presented by the EEMS Councillors for their respective countries (MTR 08545) . . . . .	305-313
<i>Research Papers</i>	
A new strain of <i>Salmonella typhimurium</i> reverted by mitomycin C and <i>N</i> -methyl- <i>N'</i> -nitro- <i>N</i> -nitrosoguanidine — a possible universal tester for mutagenic compounds (MTR 08550) by Elias Balbinder and Douglas Kerry (Lakewood) . . . . .	315-320
Rapid detection of DNA-damaging agents using repair-deficient CHO cells (MTR 08552) by C.A. Hoy, E.P. Salazar and L.H. Thompson (Livermore) . . . . .	321-332
The use of sister-chromatid exchange in Chinese hamster primary lung cell cultures to measure genotoxicity (MTR 08548) by R.W. Shimizu, J.D. Sun, A.P. Li, G.J. Newton and A.L. Brooks (Albuquerque and St. Louis) . . . . .	333-342
Use of low temperature for growth arrest and synchronization of human diploid fibroblasts (MTR 03910) by Ilona C. Enninga, R.T.L. Groenendijk, A.A. van Zeeland and J.W.I.M. Simons (Leiden) . . . . .	343-352
<i>Meeting Report</i>	
Environmental mutagenesis and carcinogenesis: Test method development, validation and utilization (MTR 08547) by Frederick J. de Serres and Taijiro Matsushima . . . . .	353-359
<i>Selected abstracts</i> of papers presented at the 12th Annual Meeting of the Environmental Mutagen Society of Japan (MTR 08546) 28-29 October 1983, Tokushima (Japan) . . . . .	361-386
<i>Announcements</i> . . . . .	387
<i>Editorial</i>	
Whither genetic toxicology? Suggestions for preserving its continued vitality (MTR 08561) by Herbert S. Rosenkranz (Cleveland) . . . . .	389-390

*Research Papers*

153-158	Intercultivar difference with respect to mutagenicity of fava beans ( <i>Vicia faba</i> L.) after incubation with nitrite (MTR 08554) by J.C.M. Van der Hoeven, W.J. Lagerweij, A. Van Gastel, J. Huitink, R. De Dreu and L.W. Van Broekhoven (Wageningen) .....	391-394
159-164	The human lymphocyte micronucleus assay Response of cord blood lymphocytes to $\gamma$ -irradiation and bleomycin (MTR 08555) by S. Zeinab Aghamohammadi, Leigh Henderson and R.J. Cole (Brighton) .....	395-401
165-263	Differences in the induction of SCEs between human whole blood cultures and purified lymphocyte cultures and the effect of an S9 mix (MTR 08557) by Karl Mehnert, Richard Düring, Walther Vogel and Günter Speit (Ulm) .....	403-410
265	Human lymphocytes assay: Cyclophosphamide metabolic activation by S9 system with low cytotoxicity (MTR 08553) by I. Sbrana, L. Zaccaro, D. Lascialfari, I. Ceccherini and N. Loprieno (Pisa) .....	411-416
267-272	Sperm count, morphology and fluorescent body frequency in autopsy service workers exposed to formaldehyde (MTR 08556) by Jonathan B. Ward Jr., James A. Hokanson, Edward R. Smith, Lina W. Chang, Michael A. Pereira, Elbert B. Whorton Jr. and Marvin S. Legator (Galveston and Cincinnati) .....	417-424

*Meeting Report*

273-282	Symposium on 'Dose-response relationship for genetic effects of environmental chemicals with special regard to the problem of thresholds' Report of a conference held in Tokyo, 7-9 May 1984 (MTR 08558) by F.H. Sobels (Leiden) .....	425-428
283-294		
295-303	Contents, Vol. 130 (1984) .....	429-431

305-313

315-320

321-332

333-342

343-352

353-359

361-386

387

389-390